

# BEVERLEY LAND CONSERVATION DISTRICT COMMITTEE (LCDC) TRIAL

## A review of the 5-year randomised trial program of Field Crops

Authorised for release by:

**Carol Phillips** | Executive Consultant Communications and Media

### FROM THE ARCHIVES

We revisit parts of an INSIGHT written by Dr Hooshang Nassery, RLF's Head of Technical. It was published in 2015. It presents an abridged version of a 5-year independent trial conducted over the period 1997-2002 in Western Australia. It involves wheat, oats and canola. It is an important trial to look back on, particularly in this time of changing practices in pursuit of greater efficiencies and more sustainable agricultural practices. It also supports the goal of carbon capture. It should be appreciated however that the costs quoted were those current at the time of the trial. It is always good to look back at some of our previous articles and reports and to remind our customers of some of the published science around RLF products and practices.

### Introduction

This article presents an abridged version of the 5-year trial of a completely randomised design with three replicates and nine nutritional treatments, as conducted by Mr Bill Roy of Agricultural Consulting and Research Services Pty Ltd during the period 1997 to 2002. The crops in rotation were : Eradu **wheat** (1997), Pallinup **oat** (1998), Karoo **canola** (1999), Carnamah **wheat** (2000) and Calingiri **wheat** (2001).

RLF products were trialled along with eight others and the 5-year trial showed that RLF's program and products increased yield, on average, by **8.55%**. These results are worthy of revisiting as they demonstrate the beneficial results and consistency of RLF products over that of 'local practice' and over a great number of years.

This article only reviews the results of the same base fertiliser programs to ensure 'like for like' results are compared. RLF's Product Evaluation Review (PER6) also reviews this trial. It can be accessed [here](#).

### An Overview of the Trial

Based on the cumulative five-year results reported in the final report of Beverley LCDC, and the report of Mr Roy in Farming Ahead (No.125, May 2002), the following key conclusions were reached:

1. The RLF program was the only program amongst the eight 'alternative' programs that returned a higher profit when compared to the 'local practice'.
2. All other seven 'alternative' programs resulted in a net loss compared to the 'local practice' program.

All are very sensible, basic and common-sense questions, and together they are the important building blocks to embracing the changes needed to bring about potentially better financial outcomes.

**Table 1: The NPS input of the treatments that produced net profit over the 5-year trial period**

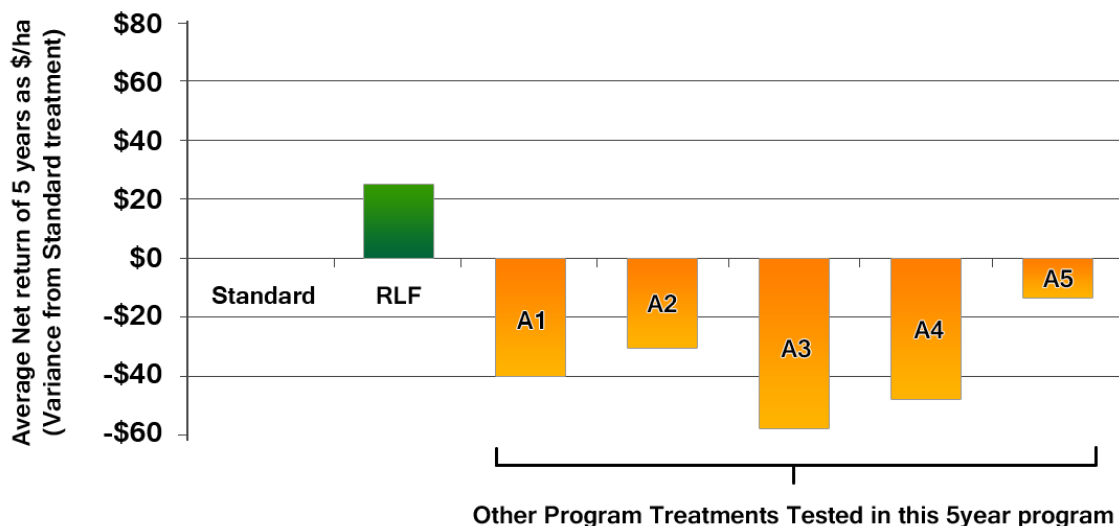
NPS (nitrogen, phosphorous and sulphur) input of the 2001 treatments, given as an example of rates of major nutrients used in the 'standard' and 'standard with RLF program'.

Treatment	Granular Product	Kg/ha of product, etc.	Base fertiliser analysis
Control	None	0	0
Standard (Local Practice)	Agstar + urea + urea	95 + 50 + 50	60 - 13 - 10
Standard + RLF *	Agstar + urea + urea	95 + 50 + 50	60 - 13 - 10

**NOTES:**

RLF program was BSN-10 Seed Priming Fertiliser (at 5-litres per tonne of seed) and one foliar application of RLF **Ultra Foliar** Fertiliser (at 2.5-litres per hectare).

**Graph 1 : Average net return or loss for the 5 year trial for different treatments as compared with standard treatment**



**Table 2: Reported yield of crops over the 5-year trial period**

Also showing percentage yield increase by the RLF program over that of the Standard program.

Treatment	Yield as tonne/ha							Total of 7 harvests (values in brackets % of 'control' program)
	1997 Eradu wheat	1998 Pallinup oats	1999 Belara lupin	1999 Karoo canola*	2000 wheat CFL**	2000 wheat CFC**	2001 Calingiri wheat	
Control	2.98	2.25	2.43	0.96	2.94	2.53	3.02	17.11 (100%)
Standard	3.47	4.04	2.58	1.60	3.08	3.15	4.94	22.86 (133.6%)
Standard and RLF program	3.90	4.05	2.90	1.72	3.38	3.55	4.98	24.48 (143.1%)
% yield increase by RLF program	<b>12.4%</b>	<b>0.25%</b>	<b>15.5%</b>	<b>7.5%</b>	<b>9.7%</b>	<b>12.7%</b>	<b>1.81%</b>	<b>8.55% Average</b>
	Year1	Year2	Year3	Year3	Year4	Year4	Year5	

**NOTES:**

\* BSN-10 was applied as foliar by mistake; the yield difference should have been much greater if Canola Plus was used as foliar spray as specified.

\*\* CFL and CFC are Carnamah wheat following lupin and canola respectively.

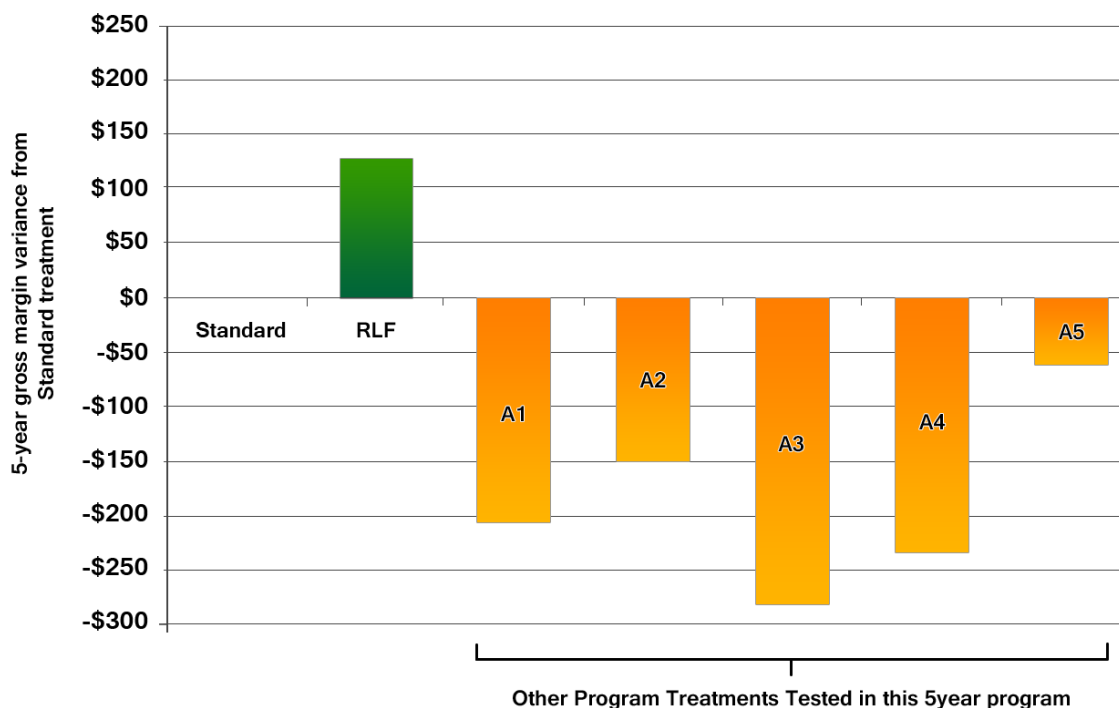
**Table 3: Gross Margin less fertiliser cost by RLF over that of Standard program**

	5-year gross margin/ha less fertiliser cost \$	Difference (loss or gain compared to Standard)	
Control	\$2,244	-\$533 / 5year	-\$106.601 / year / ha
Standard	\$2,777	0 / 5year	\$0 / year / ha
Standard and RLF program	\$2,901	\$124 / 5year	\$24.80 / year / ha

**NOTES:**

\* RLF program was **BSN-10** Seed Priming Fertiliser (at 5-litres per tonne of seed) and one foliar application of RLF **Ultra Foliar** Fertiliser (at 2.5-litres per hectare).

**Graph 2 : Net gain or loss of seven nutritional program over 5 years in reference to "Standard Program"**




**Summary**

Evaluation Trials of this nature are rarely conducted and often quite complex.

It takes an inordinate amount of preparation and planning for a long-term trial that is replicated and has different field crops with rotation. It also takes commitment on the part of companies such as RLF to relinquish the management and procedural control of its product to independent researchers and reviewers over such a long period of time. Programs such as these have inherent difficulties in maintaining uniformity over all the variabilities, ranging location, soil type, seasonal implications and the individual farmers' past and current land management preferences and practice.

Even so, RLF has always had great faith in the efficacy and efficiency of its products and willingly participated in this trial. That said, the results being revisited here are the outcome of a very tough test and RLF did extremely well in consistently demonstrating that it was the best solution.

It is a trial that commenced over 15 years ago. It is therefore testament to the quality of product that RLF's program delivered the following results :

 **8.55%**  
Yield Increase

**\$24.80**   
per hectare per year  
Profit

It should also be remembered that there are many value-added benefits flowing from the use of RLF products such as those used in this trial. The forerunners to the highly specialised Integrated Fertiliser Management (IFM) products of today – such as those used in this trial (BSN-10 and Ultra Foliar) - improves the root surface area and associated microbial activity in the rhizosphere. Such changes in root and its rhizosphere is the starting point for the chain reactions and biological activity of the soil that is considered so important for the ongoing health and sustainability of the farming land.

The role of soil organic matter and soil biological activity in crop health and sustainability of farms should always be kept in mind in order to have a productive, sustainable and safe program.

RLF is proud of this record of achievement when measured up against such a variety – of what was considered at the time – to be innovative and alternative crop fertiliser solutions.

But more importantly, of how our record of achievement has stood the test of time together with the ongoing development of our technologies and scientific solutions and concepts to ensure the best outcomes for farmers and growers in all cropping environments across the globe.

**NOTES :** All costs quoted in the body of this IN were current at the time of Trial in Western Australia.



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